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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/582,086

06/08/2006

Shinji Naruse

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WENDEROTH, LIND & PONACK, L.L.P.
2033 K STREET N. W.
SUITE 800
WASHINGTON, DC 20006-1021

EXAMINER

CHRISS, JENNIFER A

ART UNIT

PAPER NUMBER

1794

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/582,086	Applicant(s) NARUSE, SHINJI	
	Examiner JENNIFER A. CHRISS	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>06/08/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1 – 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claims 4 – 7 are unclear because it discusses the use of separators as set forth in claims 1, 2 or 3. Claims 1 - 3 only require a separator and not multiple separators as implied by claims 4 - 7. For purposes of examination this time, the Examiner will interpret claims 4 - 7 as having a typo and only requiring **one separator**. Please clarify.

4. Claims 1 – 7 are indefinite for claiming the invention in terms of physical properties rather than the chemical or structural features that produce said properties. In particular, claim 1 only requires a property, in particular, the increase ratio in internal resistance of the separator before and after its heat treatment at 300°C for 45 minutes is within 25%, where the internal resistance is calculated according to the following equation (1): (internal resistance) = {(electrical conductivity of electrolytic solution/(electrical conductivity of electrolytic solution-injected separator) } x (thickness of separator)equation (1) and wherein (electrical conductivity when the electrolytic solution is injected into separator) is the electrical conductivity calculated from the AC Impedance measured by sandwiching the electrolytic solution-injected separator between two electrodes. Additionally, claims 2 – 7 do not provide a specific structure

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that would impart the above property but instead a wide variety of substrate forms (e.g. woven fabric, non-woven fabric, paper or micro-porous film) using a wide variety of materials (e.g. selected from the group consisting of aramid, wholly aromatic polyester, wholly aromatic polyazo compound, wholly aromatic polyesteramide, wholly aromatic polyether, polyether ether ketone, polyphenylene sulfide, poly-phenylenebenzobisthiazole, polybenzimidazole, poly-p-phenylenebenzobisoxazole, polyamidimide, polyimide, bis-maleimide • triazine, polyaminobismaleimide, polytetrafluoroethylene, ceramic, alumina, silica, alumina-silica, glass, rock wool, silicon nitride, silicon carbide, carbon, zirconia, potassium titanate, magnesium hydroxysulfate and synthetic calcium silicate) which is heat treated at a wide range of temperatures (e.g. anything above 300 degrees C). *Ex parte Slob*, 157 USPQ 172, states, "Claims merely setting forth physical characteristics desired in an article, and not setting forth specific composition which would meet such characteristics, are invalid as vague, indefinite, and functional since they cover any conceivable combination of ingredients either presently existing or which might be discovered in the future and which would impart said desired characteristics." Also, "it is necessary that the product be described with sufficient particularity that it can be identified so that one can determine what will and will not infringe." *Benger Labs, Ltd v. R.K. Laros Co.*, 135 USPQ 11, *In re Bridgeford* 149 USPQ 55, *Locklin et al. v. Switzer Bros., Inc.*, 131 USPQ 294. Furthermore, "Reciting the physical and chemical characteristics of the claimed product will not suffice where it is not certain that a sufficient number of characteristics have been recited that the claim reads only on the particular compound which applicant

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has invented.” *Ex parte Siddiqui*, 156 USPQ 426, *Ex parte Davission et al.*, 133 USPQ 400, *Ex parte Fox*, 128 USPQ 157.

Claim Rejections - 35 USC § 102/103

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 – 7 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ohno et al. (CA 2,379,555).

Ohno et al. is directed to a polymetaphenylene isophthalamide porous film having excellent gas permeability and resistance to heat (Abstract).

As to claims 1 – 7, Ohno et al. teach in Example 3 a porous polymetaphenylene isophthalamide film which is heat treated at 350 degrees C for 10 minutes to create a separator for a lithium battery, where the separator is situated between an anode and a cathode (page 26, lines 10 - 30). The Examiner equates polymetaphenylene isophthalamide to Applicant’s “aramid” as polymetaphenylene isophthalamide is known in the art to be a meta-aramid. It should be noted that the heat treatment is performed at

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a temperature higher than 200 degrees C as required by Applicant. It should be noted that Ohno et al. teach various other Examples with Applicant's claimed material heat treated within Applicant's desired temperature range.

Ohno et al. teach the claimed invention above but fails to teach that the increase ratio in internal resistance of the separator before and after its heat treatment at 300°C for 45 minutes is within 25%, where the internal resistance is calculated according to the following equation (1): (internal resistance) = {(electrical conductivity of electrolytic solution/(electrical conductivity of electrolytic solution-injected separator) } x (thickness of separator)equation (1) and wherein (electrical conductivity when the electrolytic solution is injected into separator) is the electrical conductivity calculated from the AC Impedance measured by sandwiching the electrolytic solution-injected separator between two electrodes. It is reasonable to presume that the above property is inherent to Ohno et al. Support for said presumption is found in the use of like materials (i.e. a separator comprising a porous aramid film heat treated at 350 degrees C) which would result in the claimed property. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed properties would obviously have been present once the Ohno et al. product is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977). It should be noted that the claim does not positively require that the separator is heat treated at 300°C for 45 minutes but only that the increase ratio in internal resistance is within 25% according to the formula **when** the separator is heat treated at 300°C for 45

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minutes, where the measurements are taken before and after heat treating. If the Applicant intends to require that the separator is heat treated at 300°C for 45 minutes, the claim should be amended to positively require that limitation.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1 – 7 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 3, 4 and 11 of ***copending Application No. 11/659,426***. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are both directed to a substrate formed from aramid fiber used as a separator in an electrical part. Copending Application No. 11/659,426 does not teach heat treating at

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temperatures not lower than 200 degrees C, however, it would have been obvious to one at ordinary skill in the art to heat treat the substrate within Applicant's desired temperature range as altering the heat treatment temperature is within the skill of one in the art depending on the desired properties of the substrate. Additionally, the Examiner submits that the property of claim 1 would be inherent to Application No. 11/659,426 based on like materials.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

8. Claims 1 – 7 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 3 and 6 of ***copending Application No. 11/885,156***. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are both directed to a substrate formed from aramid fiber used as a separator in an electrical part. Copending Application No. 11/885,156 does not teach heat treating at temperatures not lower than 200 degrees C, however, it would have been obvious to one at ordinary skill in the art to heat treat the substrate within Applicant's desired temperature range as altering the heat treatment temperature is within the skill of one in the art depending on the desired properties of the substrate. Additionally, the Examiner submits that the property of claim 1 would be inherent to Application No. 11/885,156 based on like materials.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

9. Claims 1 – 7 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 3 of ***copending Application No. 11/578,570***. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are both directed to a substrate formed from aramid fiber used as a separator in an electrical part. Copending Application No. 11/578,570 does not teach heat treating at temperatures not lower than 200 degrees C, however, it would have been obvious to one of ordinary skill in the art to heat treat the substrate within Applicant's desired temperature range as altering the heat treatment temperature is within the skill of one in the art depending on the desired properties of the substrate. Additionally, the Examiner submits that the property of claim 1 would be inherent to Application No. 11/578,570 based on like materials.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

10. Claims 1 – 7 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 12 and 15 of ***copending Application No. 10/519,003***. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are both

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directed to a substrate formed from aramid fiber used as a separator in an electrical part. Copending Application No. 10/519,003 does not teach heat treating at temperatures not lower than 200 degrees C, however, it would have been obvious to one of ordinary skill in the art to heat treat the substrate within Applicant's desired temperature range as altering the heat treatment temperature is within the skill of one in the art depending on the desired properties of the substrate. Additionally, the Examiner submits that the property of claim 1 would be inherent to Application No. 10/519,003 based on like materials.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER A. CHRISS whose telephone number is (571)272-7783. The examiner can normally be reached on Monday - Friday, 8:30 a.m. - 6 p.m., first Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on 571-272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jennifer A Chriss/
Examiner, Art Unit 1794

/J. A. C./
Examiner, Art Unit 1794